PATENT COOPERATION TREATY

PCT

TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2003P08636WO				FOR FURTHER ACTION		See Form	See Form PCT/IPEA/416			
Internation	onal applicat	ion No.		International filing da	ate (dav/month/vear) Priority d	ate (day/month/year)			
PCT/EP2004/013651				01.12.2004		·	11.12.2003			
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International Patent Classification (IPC) or national classification and IPC										
• 01	F01 D25/14, F01 D11/18, F01 D5/28									
A 1:	-4									
Applicant SIEMENS AKTIENGESELLSCHAFT										
SIE	MENS A	VITEM	2E2ETT2	CHAFI						
1.				ninary examination re e applicant according t		this Internationa	l Preliminary Examining Authority			
2.	This REPO	RT consists	of a total of _	8	sheets, inc	cluding this cover	sheet.			
3.	This report	is also accor	npanied by Al	NNEXES, comprising:	:					
	a. 🔀	(sent to the c	applicant and	to the International Bi	ureau) a total of _9)	sheets, as follows:			
	Б						d are the basis for this report and/or			
	L	sheets Instruc	_	tifications authorized	by this Authority (s	see Rule 70.16 and	d Section 607 of the Administrative			
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental									
	Box.									
	b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))									
	, containing a sequence listing and/or tables									
	related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).									
4.	This report	contains ind	ications relatir	ng to the following iter	ms:			_		
	Вох	No. I	Basis of the	report						
	Вох	No. II	Priority							
	Вох	No. III	Non-establis	hment of opinion with	n regard to novelty,	inventive step and	l industrial applicability			
	Вох	No. IV	Lack of unit	y of invention						
	Вох	No. V		atement under Article explanations support		novelty, inventiv	ve step or industrial applicability;			
	Вох	No. VI	Certain docu							
	Вох	No. VII	Certain defe	cts in the international	application					
	Вох	No. VIII	Certain obse	rvations on the interna	ational application					
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/013651

Box	No. I	I Basis of the report		
1.		h regard to the language, this report is based on the internati cated under this item.	onal application in the language in	which it was filed, unless otherwise
		This report is based on translations from the original langum which is the language of a translation furnished for the pure international search (Rule 12.3 and 23.1(b)) publication of the international application (Rule 12. international preliminary examination (Rule 55.2 and	eposes of:	,
2.	rece	h regard to the elements of the international application, this elving Office in response to an invitation under Article 14 a report): the international application as originally filed/furnished the description:	we referred to in this report as "o	riginally filed" and are not annexed to
				as originally filed/furnished
		pages*		
	\square	pages*	_ received by this Authority on	
		the claims:		· · · · · · · · · · · · · · · · · · ·
		nos.		as originally filed/furnished
		nos.* 1–30		12.04.2005 with letter
		nos.*		
	\square		_ received by this Additionty on	
		the drawings:		
		sheets 1/9-9/9		as originally filed/furnished
		sheets*		
				_
	\vdash	a sequence listing and/or any related table(s) – see Suppler	nental Box Relating to Sequence L	asting.
3.	Ш	The amendments have resulted in the cancellation of:		
		the claims, nos.		
4.	\bowtie	This report has been established as if (some of) the amen they have been considered to go beyond the disclosure as t		
		the description, pages		
		the claims, nos. 1,4,5,29,30		
		the drawings, sheets/figs		
		the sequence listing (specify):		
		any table(s) related to sequence listing (specify):		
*	If ite	em 4 applies, some or all of those sheets may be marked "suj	perseded."	

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/013651

Statement	s and explanations supporting such statement	
Novelty (N)	Claims 2-28, 30	YE
	Claims 1,29	
Inventive step (IS)		
invenive step (15)	Claims 1-30	
Industrial applicab	4.00	
mousurar applicac	Claims 1-30	
Citations and explana	tions (Rule 70.7)	
1. Th	nis report makes reference to the following	
docum	ments:	
D1:	DE 195 35 227 A (ASEA BROWN BOVERI) 27 March	
	1997	
D2:	DE 723 476 C (BBC BROWN BOVERI & CIE) 5	
	August 1942	
D3:	US 6 336 789 B1 (HUSTER JOSEF ET AL) 8	
	January 2002	
D4:	EP 0 374 603 A (G&H MONTAGE; DAIMLER BENZ AG)	
	27 June 1990	
D5:	US 4 405 284 A (ALBRECHT GUENTER ET AL) 20	
	September 1983	
D6:	US 5 350 599 A (RIGNEY DAVID V ET AL) 27	
	September 1994	
D7:	US 6 345 953 B1 (GOBRECHT EDWIN ET AL) 12	
	February 2002	
2. Th	ne present application does not meet the	
requi	rements of PCT Article 33(1), because the	
subje	ect matter of claims 1 and 29 lacks novelty	
withi	n the meaning of PCT Article 33(2).	
2.1	D1 discloses (the reference signs in	

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

parentheses refer to D1):

the use of a thermal insulating layer (3) for a steam turbine (column 1, line 8) consisting of a plurality of housings (1,4), for adapting to the different thermal deformation behaviors (column 3, lines 40-42) of the housing (1),

the housing (1) being subjected to a difference in temperature owing to a higher temperature on the one side of the housing and a lower temperature on the other side of the housing (column 1, lines 17-20), the thermal insulating layer (3) being applied to the side of the housing (1) having the higher temperature (see figure).

- 2.2 Therefore, the subject matter of claim 1 lacks novelty.
- 2.3 D2 discloses (the reference signs in parentheses refer to D2):

a steam turbine (page 1, line 1) having two housings (1,2), the housings (1,2) having a thermal insulating layer (3,4), the thermal insulating layer being present in at least two housings (1,2), and the thermal insulating layer having different thermal insulating effects in the two housings (1,2) (page 2, lines 11-34).

2.4 Therefore, the subject matter of claim 29 lacks novelty.

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 3. The present application does not meet the requirements of PCT Article 33(1), because the subject matter of claim 2 does not involve an inventive step within the meaning of PCT Article 33(3).
- 3.1 D2 discloses (the reference signs in parentheses refer to D2):

the use of a thermal insulating layer for a steam turbine (page 1, lines 1-2) in order to avoid bending the housing (page 1, lines 34-39) and therefore to avoid inadmissible radial play (page 1, lines 28-33),

the steam turbine having a plurality of housings (1,2) in a blade-mounting area, and the thermal insulating layer being present on the housing of the blade-mounting area (figure).

- 3.2 The subject matter of claim 1 differs from the known use of a thermal insulating layer in that the thermal insulating layer is used to reduce radial play.
- 3.3 A person skilled in the art is, however, familiar with the fact that thermal insulating layers can be used not only to prevent bending, but also to reduce radial play; see, for example, D3 (abstract), D4 (column 2, lines 4-13) and D5 (column 1, lines 35-45).
 - 3.4 A person skilled in the art would also

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

apply the known thermal insulating layer according to the circumstances in order to reduce radial play, without thereby being inventive.

- 3.5 Therefore, the subject matter of claim 2 does not involve an inventive step.
- 4. It should also be noted that independent claims 1, 2 and 29 also fail to meet the PCT requirements for novelty and inventive step in view of documents D4-D6.
- 4.1 The subject matter of claims 1 and 2 differs from the use of the thermal insulating layer known from D4 only by the use in a steam turbine rather than in a turbocharger or a different turbomachine. A person skilled in the art would also use the thermal insulating layer known from D4 in steam turbines according to the circumstances, because he is familiar with the fact that steam turbines present the same technical problems as other turbomachines. The same line of reasoning also applies to D5.
- 4.2 D6 discloses all of the features of claim 29.
- 5. Dependent claims 3-28 and 30 contain no features that, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step, since the additional features are either already known from the prior art or are of

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

the kind that a person skilled in the art routinely uses on the basis of familiar considerations; see, for example:

- for claim 3: D2
- for claim 4: D4, figures
- for claims 6, 7, 9, 12 and 13; D5, column
- 2, line 49 to column 3, line 26
- for claims 14-16: D7, column 4, line 27 to column 5, line 39
- for claims 19 and 20: D2
- for claims 21 and 22: D1, figures
- for claims 23 and 24: D3
- for claim 28: D6, column 2, line 43 to column 3, line 40
- for claim 30: D4, figure 1
- 5.1 Furthermore, it should also be noted that the indications of function in claim 10 (the higher ... equals"), 27 ("without ... being increased") and 30 ("the thermal insulating layer... is subjected to") do not enable a person skilled in the art to determine what features are necessary in order to carry out the indicated functions. Insofar as can be determined, the claims do not appear to meet the PCT requirements for inventive step.
- 6. The invention is industrially applicable in the field of steam turbines (PCT Article 33(4)).

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box I

The amendments submitted with the letter of 8 April 2005 introduce substantive matter which, contrary to PCT Article 34(2)(b), goes beyond the disclosure of the international application as filed. The claims in question are claims 1 and 29.

In these claims, a thermal insulating layer is used in a steam turbine having an inner housing and an outer housing in order to adapt to the different thermal deformation behaviors of the two housings. This use of a thermal insulating layer is not, however, disclosed in the originally submitted application (in particular, description, page 14, lines 7-14 and 29-34).

Therefore this report was based on the originally submitted independent claims 1 and 29. Consequently, the dependent claims have been interpreted as also being dependent on the originally submitted claims 1 and 29 (or on the newly submitted, independent claim 2).